



# Oregon

John A. Kitzhaber, MD, Governor

## Water Resources Department

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### MEMORANDUM

TO: Water Resources Commission

FROM: Jon Unger, Water Supply Development Coordinator

SUBJECT: Agenda Item N, May 30, 2014  
Water Resources Commission Meeting

### Update on Potential Storage Opportunities

#### I. Background and Issue Statement

As Oregon's population and climate change in the future, understanding and planning for current and future instream and out-of-stream demands will become increasingly important. In some areas of the state, demand already exceeds supply.

As called for in Oregon's Integrated Water Resources Strategy (IWRS), improving access to built storage is one element in a broader water supply development strategy to meet Oregon's water needs. This can be achieved through the development of below-ground storage sites as well as the construction of above-ground, off-channel storage sites. Improving access to storage can also include improvements to existing storage infrastructure, the re-allocation of water in federal reservoir systems that have not undertaken formal allocation processes, or investing in and purchasing water from stored water facilities.

During this agenda item, staff will update the Commission on the status of proposed storage projects and discuss how analysis of water availability and water demand can help to identify opportunities to increase access to storage.

#### II. Discussion

##### A. Project Update

##### Similkameen Project

In conjunction with the State of Washington, the Department is working with Fortis, a Canadian energy company, to investigate the potential to invest in a hydroelectric dam on the Similkameen River in British Columbia in exchange for releases of water to mitigate for withdrawals from the Columbia River.

Fortis has expended significant funds to date on the project. Prior to securing approval for project construction, Fortis must conduct environmental studies in coordination with the British Columbia provincial government. Washington and Oregon are considering providing a financial contribution to the environmental study to help assess the feasibility of the project prior to making a more significant investment. Any financial contribution to the study would count toward future investments needed to facilitate project construction and stored water releases.

#### Juniper Canyon Reservoir

A proposed dam in Juniper Canyon, 25 miles northwest of Pendleton, could store an estimated 49,000 acre-feet of water, which would be pumped from the Columbia during winter months. A Water Conservation, Reuse and Storage grant application has been submitted to the Department to determine project feasibility, including hydroelectric generation potential.

#### Wallowa Lake Dam Repair

The Wallowa Lake Dam, owned by the Associated Ditch Company, is an old concrete dam in poor condition. The Associated Ditch Company (ADC) has an interest in marketing water downstream to provide mitigation for new diversions from the Columbia River. For safety reasons, water levels in the lake have been significantly reduced. Repair of the dam could increase lake levels, allowing the release of additional stored water during the irrigation season. Fish passage devices would also need to be installed, which could lead to the introduction of a Sockeye salmon run.

One of the water rights underwent a character of use change to allow for “multi-purpose” uses. ADC also submitted an application for a “flow augmentation” right that could potentially facilitate downstream marketing.

#### East Valley Water District Proposed Reservoir

Located approximately six miles southeast of Silverton in Marion County, the proposed East Valley Water District reservoir would store 12,000 acre-feet of surface water from Drift Creek, a tributary of the Pudding River. The project would provide a new surface water source for irrigation in an area that has experienced groundwater level declines and contains two Groundwater Limited Areas.

East Valley Water District has received \$362,117 in Water Conservation, Reuse and Storage grants and another \$500,000 from other state funds to study the proposed project. Recently, concern has been expressed regarding the inundation of private property. The water right permit to store 12,000 acre-feet of water is currently pending.

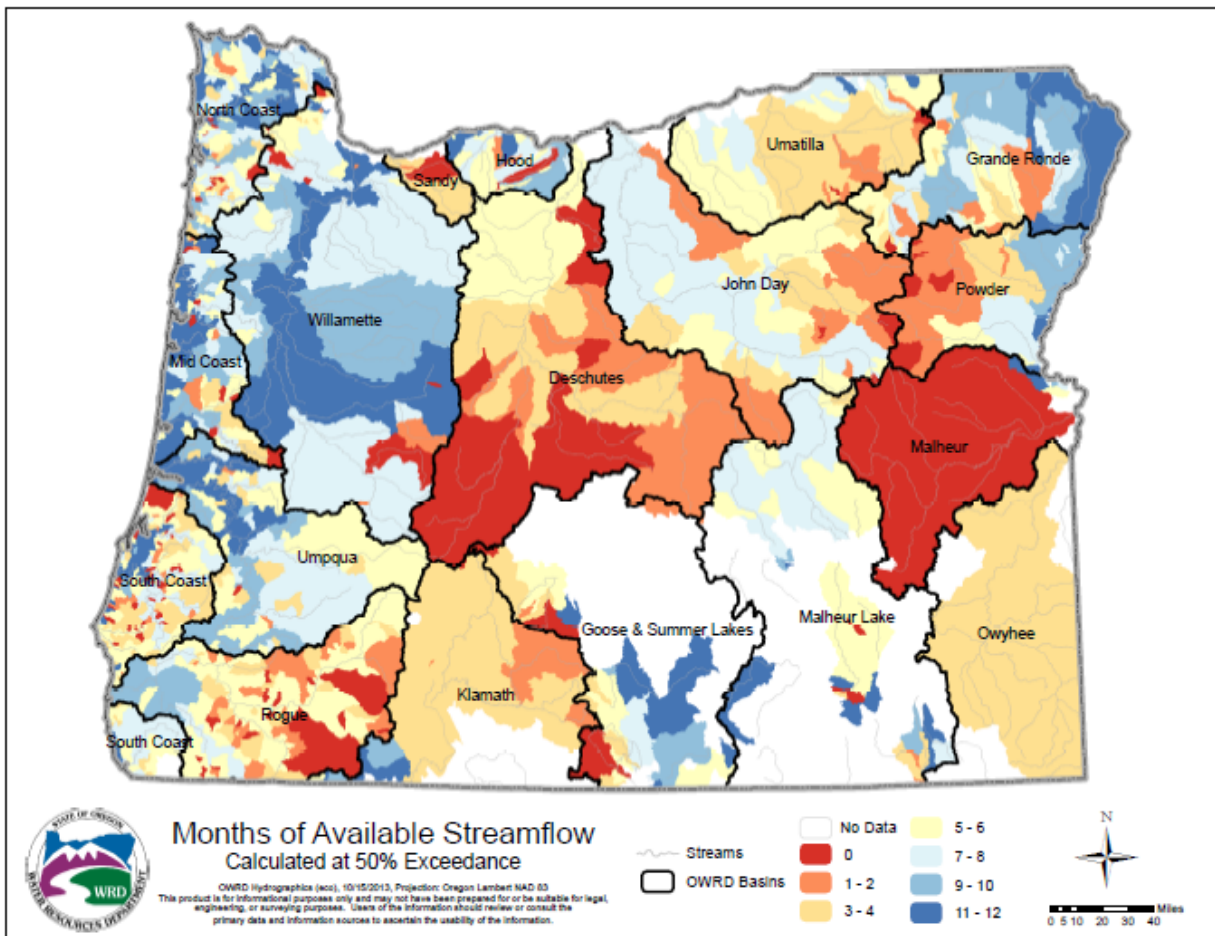
#### B. Water Availability to Assist in Determining Storage Feasibility

Prior to storing water in Oregon, a water right permit must be secured from the Department. In order to obtain a permit, water must be available. Therefore, staff performed a statewide water availability analysis to show where and for how long water is available for storage.

For storage purposes, water availability must meet the 50 percent exceedance criteria, meaning that water must be available on average, five out of every 10 years. Existing water rights are accounted for when determining if water is available.

The accompanying map indicates, generally, where water may be available for storage in Oregon. Areas in red have water available for storage “zero” months of the year. Areas in dark blue have water available for storage 11-12 months of the year. The fewer months water is available for storage, the less likely a large storage project will be feasible. In addition to the time it takes to fill a reservoir, other factors to consider are the amount of water lost due to evaporation or seepage into the groundwater.

**Figure 1** – Number of months that water is available for storage.



### **C. Identifying Approaches to Address Water Supply Needs**

The Water Supply Development Initiative will allow the State of Oregon to take a more active role to support development of water projects. Communities should be encouraged to understand the area's current water needs and what should be done to secure reliable water resources for future generations. Part of any long term statewide strategy to advance water supply development should include an identification of areas with significant unmet instream and out-of-stream needs, followed by an identification of opportunities to meet those needs.

There are parts of Oregon in which investment in storage or other water supply projects could provide immediate economic benefit, through the irrigation of new lands for crop production or due to municipal and industrial growth. Projects receiving public funding through the Water Supply Development fund will also provide environmental and social benefits. Water supply projects, therefore, can benefit Oregon's economy, communities, and ecosystems.

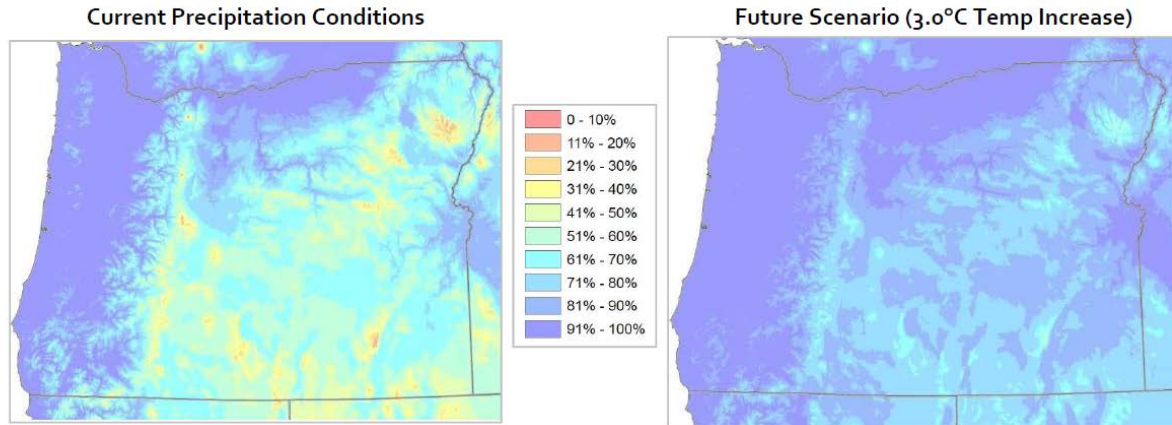
Areas of significant unmet needs in Oregon need to be identified, while taking into account limiting factors such as water availability, the suitability of lands for agriculture, current and future municipal demand, climate change, and instream needs.

The water supply development team is working with communities to understand water needs across the state, recognizing that each region is different and a "one size fits all" approach will not meet the needs of all communities. For this reason the water supply development team will strive to work with regions to identify water supply priorities and opportunities.

Place-based integrated water resources planning could help to identify solutions with broad-based support to move forward. Regional Solutions or Oregon Solutions projects also provide another avenue to generate ideas that can be implemented. As discussed in the Budget Updates, the Department is seeking resources to further place-based planning and involvement in Regional Solutions.

The Department will also play an active role in providing communities and project proponents with the technical expertise necessary to understand and address water supply needs. Hiring the Water Supply development Team Leader will greatly increase the Department's capacity. The Department is currently recruiting for this position.

**Figure 2** – 2050 Scenario: The potential effect climate change will have on the percentage of precipitation that falls as snow.



Red, yellow, and orange hues represent areas where a large percentage of precipitation falls as snow.

Snow-dominant areas largely disappear with a rise in air temperature.

## II. Conclusion

Improving access to stored water is one component of a broader water supply development initiative to meet future instream and out-of-stream needs and provide greater surety to existing water rights holders in years when precipitation and snowpack are insufficient to meet demands. In addition to storage projects, the Water Supply Development staff will help communities pursue projects that increase efficiency of water use, promote water reuse, promote water conservation, support allocation of federally stored water, and facilitate streamflow protection or restoration.

The State of Oregon can play a key role in the realization of water supply development opportunities by working with communities to understand and identify solutions to their water supply challenges.

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